Payson PCE
Water Quality Assurance Revolving Fund

RECORD OF DECISION

Arizona Department of Environmental Quality
1110 West Washington Street
Phoenix, Arizona 85007

ADEQ
Arizona Department
of Environmental Quality

May 31, 2007

Payson PCE WQARF Site
Record of Decision
APPROVAL PAGE

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1.0 INTRODUCTION

The contamination at the Payson PCE WQARF Site was initially discovered during routine sampling conducted by the Town of Payson for source water approval of four wells that were completed as future Town of Payson water supply wells. The analytical testing identified levels of tetrachloroethene (PCE) and trichloroethene (TCE) above their respective aquifer water quality standards. The Site was incorporated into the newly created WQARF Registry List on April 28, 1998, due to the presence of PCE and TCE in groundwater and the fact that the Town of Payson is largely dependent on groundwater for their water supply.

As part of an early response action (ERA), ADEQ constructed three remediation systems to begin remediation of the contamination found at the Payson PCE WQARF Site. A soil vapor extraction system was constructed to remove any contamination located in the soil near the source area. An interim groundwater treatment system was installed to remove and treat high levels of PCE contaminated groundwater also near the source area. The expanded groundwater treatment system was installed in order to contain the contamination plume and remediate residual contamination found within the groundwater.

According to A.R.S. §49-287.03, ADEQ completed the remedial investigation (RI) report and the feasibility study (FS) report. The RI report established the nature and extent of the contamination and sources thereof; identified current and potential impacts to public health, welfare, and the environment; identified current and reasonably foreseeable uses of land and waters of the state; and obtained and evaluated any information necessary for identification and comparison of alternative remedial actions. The FS report used the information collected as part of the RI to identify a reference remedy and alternative remedies that appear to be capable of achieving remedial objectives and to evaluate them based on the comparison criteria to select a remedy that complies with A.R.S. §49-282.06.

ADEQ used the evaluation of remedial alternatives evaluated in the FS report to choose a remedial method. According to A.R.S. §49-287.04, ADEQ then prepared a proposed remedial action plan that included a description of the chosen remedy, how the remedy will achieve each of the remedial objectives identified in the RI report, how accomplishment of the remedial objects is to be measured, and a description of the use of the remediated water as defined in A.R.S. §49-287.01.

The proposed remedial action plan (PRAP) was published for public comment. ADEQ received one comment regarding the remedial plan and has prepared this record of decision. According to A.A.C. R18-16-410(B), a responsiveness summary in regards to the comment that was received has been included in this record of decision. This record of decision includes a description of the remedy, a comprehensive responsiveness summary regarding all comments received on the proposed remedial action plan, a demonstration that the remedy will achieve the remedial objectives, a demonstration that the remedy meets the requirements of A.R.S. §49-282.06, a time period for commencing

and completing the remedy, a total estimated cost, and a time-frame for review of the remedy to ensure that the remedy is effective in achieving the remedial objectives.

2.0 SITE BACKGROUND

2.1 SITE DESCRIPTION

The Site is approximately 110 acres in area and is located in the southern portion of the Town of Payson, bounded approximately by Frontier Street on the north, Beeline Highway on the east, Aero Drive on the south and McLane Road on the west (Figure 1). The Site is characterized by the presence of tetrachloroethene (PCE) and trichloroethene (TCE) in groundwater, associated with the former Old Payson Dry Cleaners (OPDC; the source) located north of the intersection of the South Beeline Highway and West Nugget Street.

2.2 PAYSON PCE WQARF REGISTRY SITE

Contamination at the Site was initially identified by the Town of Payson during their routine groundwater sampling in May 1990. The sampling was conducted for source water approval of four wells that were completed as future Town of Payson water supply wells (Wells TOP-4, -5, -19 and -20). The analytical testing of groundwater identified PCE in concentrations of 13,600 micrograms per liter (µg/L) and 542 µg/L in Well TOP - 4 and, -5, respectively (Earth Technology Corporation [Earth Tech], 1992). The Arizona Aquifer Water Quality Standard (AWQS) for both PCE and TCE is 5 µg/L.

The Site was identified as a potential WQARF Site in 1990 and, in response, a comprehensive groundwater monitoring program was initiated by the ADEQ that involved the sampling of additional wells in the area. The monitoring indicated detectable concentrations of PCE in eight wells (Earth Tech, 1992).

In 1993, the initial investigation for the ADEQ was conducted by the Preliminary Assessment/Site Inspection Unit (PASI), which identified the OPDC as a possible source of PCE contamination. The OPDC reportedly has historically operated at 904-906 South Beeline Highway and 908-910 South Beeline Highway (Figure 2). The Site was added to the WQARF Priority List in December 1993 pending further investigation. The Site was then added to the newly created WQARF Registry List on April 28, 1998, with a score of 45 out of a possible 120, due to the presence of PCE and TCE in groundwater.

2.3 SOURCE AREA DEFINITION

The PASI Unit of ADEQ identified two properties which were investigated to determine the source of contamination at the Site: the 904 and 906 South Beeline Highway property, which was the last known location for the OPDC; and the 908 and 910 South Beeline Highway location, which currently is occupied by a Texaco Star Mart gasoline station and historically was occupied by the OPDC on the 908 S. Beeline parcel (ADEQ, 1993). The WQARF site boundaries have then been defined based on the extent of PCE contamination, which extended approximately from South Beeline Highway to South McLane Road, between West Main Street and West Aero Drive (Figure 1).

2.4 CHRONOLOGY OF SITE ACTIVITIES

To assist in reviewing the various investigation activities, this chronology was compiled of major investigative activities at the Site. The following outlines many of the events and investigative milestones for the project:

April 1990:	Town of Payson sampling finds PCE and TCE in groundwater collected from wells TOP-4 and TOP-5 and reports results to ADEQ.
May 1990:	ADEQ identifies the Site as a WQARF Site and conducts initial groundwater sampling event.
December 1990:	Earth Tech, for ADEQ, re-samples wells TOP-4, -5, -19 and Worden.
February 1991:	Earth Tech, for ADEQ, presents work plan for hydrogeologic investigation.
April 1992:	Well elevation and locations surveyed by Yost and Gardner for ADEQ.
November 1992:	ADEQ identifies potential source area (OPDC).
February 1993:	ADEQ conducts Preliminary Assessment (PA) of OPDC.
March 1993:	Earth Tech, for ADEQ, samples wells near Site and prepares plume map.
March 1993:	Earth Tech, for ADEQ, conducts hydrophysical logging of TOP-4 and TOP-5.
April 1993:	ADEQ conducts Site Inspection (SI), including GeoProbe™ groundwater, soil vapor and soil sampling in source area.
December 1993:	Payson WQARF Site placed on the WQARF Site Priorities List.
February 1994:	ADEQ conducts additional Site investigation activities, including the drilling of monitor wells PP-01 (became EW-3), PP-02 and HydroPunch® sampling along four profiles at and near source area (OPDC).
February 1994:	ADEQ begins intermittent groundwater monitoring and sampling of wells near the Site, based on availability of funding.
June 1994:	ADEQ completes monitor well PP-01 (EW-3). Aquifer testing was subsequently conducted in December 1994.
January 1995:	ADEQ conducts an Expanded Site Inspection (ESI) investigation, including soil vapor and soil sampling and sampling of the suspected source area (septic tank).
June 1995:	Growth Environmental (Growth), for ADEQ, removes septic tank system at OPDC as an Early Response Action (ERA) under WQARF, identifies cesspool and collects confirmation samples beneath septic tank.
Jan.-Mar. 1996:	ADEQ drills five additional soil borings (including coring) on the Texaco and Rundle properties (B-1 through B-5); collects discrete groundwater samples using HydroPunch® from B-1, B-2 and B-5. Borings B-3 and B-4 completed as monitor wells PP-03 and PP-04

	(Rundle 2-Inch and Rundle North). ADEQ installs extraction wells EW-1 and EW-2.
September 1996:	ADEQ contracts Dames and Moore to construct Interim Groundwater Extraction System (IGTS) as an ERA under WQARF.
Oct.-Nov. 1996:	ADEQ installs four monitor wells downgradient of the source area (DG-1, DG-2, DG-4A and DG-5) and three additional borings DG-3, DG-4 and DG-6. Depth- specific water sampling was conducted prior to well installation.
November 1996:	ADEQ conducts sampling of the OPDC cesspool.
Feb-Oct 1997:	Dames and Moore designs and builds IGTS.
Mar-Apr 1997:	Cesspool contents sampled, cesspool removed, with confirmation sampling, as an ERA under WQARF.
August 1997:	ADEQ contracts EMCON to develop Hydrogeologic Conceptual Model (HCM) and groundwater flow model and to evaluate, design and build the Expanded Groundwater Treatment System (EGTS) as an ERA under WQARF.
Aug.-Oct. 1997:	ADEQ installs well sets WS-1, WS-2 and WS-3.
December 1997:	HSI GeoTrans, for ADEQ, conducts aquifer testing on TOP-4, TOP-5, TOP-19, TOP-20, WS-1, WS-2, WS-3 and TOP-Skinner.
December 1997:	Dames and Moore takes over quarterly groundwater sampling at the Site and creates a database for sampling data.
Jan-Dec 1998:	ADEQ and EMCON formulate HCM as part of the development and construction of the groundwater flow model for the Site.
January 1998:	IGTS performance tested for 90 days.
March 1998:	Wellhead remediation system installed at the TOP-Skinner by Levine-Fricke-Recon (LFR) for ADEQ.
Apr. 98-Apr. 99:	TOP-Skinner wellhead treatment system operational.
Apr.-Oct. 1998:	EMCON designs and builds EGTS.
July 1998:	ADEQ contracts EMCON to conduct monitor well installation and aquifer testing.
July-Dec. 1998:	EMCON installs, samples, and conducts aquifer tests at 32 monitor wells to define the plume and provide additional hydrogeologic data.
October 1998:	IGTS and EGTS become fully operational and begin treating and delivering water to Town of Payson.
November 1998:	ADEQ and EMCON begin monitoring water levels in wells at the Site, with continuous monthly measurements by EMCON beginning in April 1999.
December 1998:	Extraction well EW-4 drilled, groundwater flow model report completed and delivered by EMCON.
April 1999:	Extraction well EW-4 connected to the IGTS and EW-1 and EW-2 disconnected due to declining water levels.
April 1999:	ADEQ contracts Geotechnical and Environmental Consultants, Inc. (GEC) to perform quarterly groundwater monitoring field

	activities and Dames and Moore continues to prepare quarterly reports and to maintain database.
June 1999:	TOP-Skinner wellhead treatment system removed and the well connected to the EGTS.
September 1999:	ADEQ contracts Environmental Science and Engineering, Inc. (ESE) to oversee removal of building and three USTs (which were previously abandoned) from Rundle property. USTs, the building/slab, underground utilities and contaminated soil were removed by ASL, who was retained by Kaibab Industries, purchaser of the Rundle property.
September 1999:	ESE conducts soil and soil vapor sampling and installs three sets of three nested vapor monitoring wells to evaluate the Rundle property.
September 1999:	IT, Corp (after acquiring EMCON in 1999) contracts HSI GeoTrans to measure groundwater levels and complete groundwater model update.
November 1999:	ESE collects soil vapor samples from 11 soil borings and discrete groundwater sample from three continuous core borings using HydroPunch® and installs three sets of discreet zone vapor sampling wells.
June 2000:	IT, Corp. completes monthly water level monitoring activities and GEC takes over water level monitoring on a quarterly basis in conjunction with sampling.
July 2000:	ADEQ contracts HSI GeoTrans to complete RI, drill additional extraction wells and complete investigation activities at the Site.
August 2000:	HSI GeoTrans completes vapor sampling of 14 wells (including vapor monitoring wells) at the Texaco and Rundle properties.
November 2000:	HSI GeoTrans conducts pilot soil vapor extraction (SVE) pilot test at Texaco and Rundle properties.
May 2001:	GeoTrans (formerly HSI GeoTrans) completes ADEQ-Approved Draft RI Report, presents information to CAB.
July 2001:	New extraction wells (EX -1 and EX – 2) online, providing water to EGTS.
July 2001:	GeoTrans and ADEQ present RI report to public for comment at meeting in Payson.
July 2001:	Town of Payson provides comments for RI report, identifies additional wells which have detections of PCE below AWQS.
August 2001:	GeoTrans completes construction of the SVE system and starts up the system extracting soil vapor from extraction wells EW-1 and EW-4.
August 2001:	ADEQ and GeoTrans meet with Town of Payson to discuss newly disclosed well impacts at Rodeo Grounds, Woodland Meadows No. 2 and McKamey wells.
Oct. –Nov. 2001:	GeoTrans completes geophysical logging and depth-specific groundwater sampling of three Town of Payson production wells.

Oct. –Nov. 2001:	GeoTrans completes six sentinel monitor wells at EGTS to monitor MTBE impacts.
January 2002:	GeoTrans presents a report to ADEQ and the Town of Payson outlining the results of investigation of additional PCE contaminated wells, which will be included as an Appendix to the RI report.
June 2002:	GeoTrans presents the final Remedial Investigation Report to ADEQ and the Town of Payson.
August 2002:	GeoTrans discontinues SVE system, due to a less than 0.05 pound per day removal rate.
September 2002:	GeoTrans conducts soil sampling to confirm SVE effectiveness. Samples were all non-detect for VOCs (using EPA Method 8260B).
December 2002:	GeoTrans removes SVE system from the Site.
January 2003:	IGTS shutdown, pumping rate down to 15 gallons per minute (gpm).
	GeoTrans abandons former extraction wells EW-1, EW-2 and EW-3, and vapor monitoring wells CC-B1, CC-B2 and CC-B3. GeoTrans also abandons monitor well Rundle 2-Inch and domestic well Rundle.
May 2003:	GeoTrans delivers final Feasibility Study Report to ADEQ.
August 2003:	GeoTrans delivers the final Proposed Remedial Action Plan to ADEQ.

3.0 SELECTED REMEDY

3.1 SELECTED REMEDY

Because the Town of Payson is completely dependent upon pumped groundwater to provide municipal water supplies, the aquifer near the Site is important as a critical water source for the Town of Payson. The Town of Payson reported on this as part of *Long Term Management Program of the Town of Payson's Water Resources* (Southwest Ground-water Consultants, Inc. 1998), which indicates that the aquifer beneath the Site is expected to supply approximately 35 percent of the Town of Payson's total water demands. Consequently, the Town of Payson has worked with ADEQ to construct an IGTS as an ERA under WQARF. ADEQ then constructed the EGTS as an ERA under WQARF in 1998.

Remedial Strategy: The remedial strategy for the Selected Remedy will be plume remediation to achieve AWQS for the contaminants of concern (COCs) in the groundwater within the Site.

Remedial Measures: The remedial measures for the Selected Remedy will be to pump groundwater from existing (TOP-Skinner, TOP-4, TOP-5R and TOP-19) and new production wells (EX-1 and EX- 2), treatment of COCs in the extracted groundwater by granular activated carbon (GAC) at the EGTS and delivery of the treated water to the Town of Payson. The Town of Payson will utilize the water as part of their municipal supply, with delivery to residential customers. No re-injection or recharge of treated water will occur, and discharge and transportation will be through the existing Town of Payson municipal water system.

The Selected Remedy will be pump-and-treat plume remediation using the EGTS at an operational pumping rate of 200 gpm. This pumping rate represents the approximate current operational rate for the EGTS, and reflects the current long term average pumping rate for the EGTS. This remedy assumes that following pumping rates will be employed:

Table 3-1
Pumping Rates for Selected Remedy

Well	Rate	
EX-1	25	gpm
EX-2	30	gpm
TOP-4	40	gpm
TOP-5R	40	gpm
TOP-19	40	gpm
TOP-Skinner	25	gpm
Total	**200**	**gpm**

Source Control: Source control must be considered as an element of the Reference Remedy and all alternative remedies. Source control for the Site has been achieved through the implementation of the ERA SVE/Dual Phase Extraction (DPE) and IGTS

systems at the source area. Therefore source control has been achieved and has not been included in the Selected Remedy.

To measure the progress of achievement of the remedial objectives, it is proposed that a combination of groundwater gradient measurements and groundwater quality sample analysis be completed on a semi-annual basis to determine the effectiveness of the remedy for the Site.

- Groundwater levels have been measured since 1993 at the Site, with quarterly monitoring since 1997 (semi-annually since 2002). Following the completion of the monitor well network in 1998, sufficient wells have been monitored at the Site to determine the groundwater gradient for the peripheral portions of the plume. These measurements indicated an "inward" gradient toward the pumping wells when evaluated as part of the RI Report for the Site (GeoTrans, 2002). These measurements indicate plume capture and containment is currently occurring at the Site. Future semi-annual monitoring events will include a gradient evaluation to demonstrate inward gradients, affirming ongoing capture within the area of the Site.

- Groundwater quality sampling has been ongoing since 1993 at the Site, with quarterly sampling since 1997 (semi-annually since 2002). These measurements have shown the changes in the groundwater impacted with PCE over time, including spatial and temporal changes. Groundwater sampling is a critical element to determine how the plume is changing spatially and temporally as the remedy at the Site continues to operate. These samples indicate whether the plume is expanding or contracting spatially, and how concentrations are changing with time.

The Selected Remedy for the Site consists of the EGTS, pumping at a rate similar to current operation, or approximately 200 gallons per minute (gpm). The Selected Remedy has been demonstrated, as part of the FS, to:

- Best assure, the protection of public health and welfare and the environment;
- To the extent practicable, provide for the control, management and cleanup of the PCE contamination, maximizing beneficial use of the groundwater in the Town of Payson; and,
- Is reasonable, necessary, cost-effective and technically feasible.

The EGTS has been successfully delivering treated groundwater to the Town of Payson since 1998. The EGTS is currently operating at the Site at approximately 200 gpm and has not had detectable concentrations of PCE in the effluent throughout its operational history. The EGTS consists of two 20,000-pound GAC units connected in series, which currently receive contaminated groundwater from up to six extraction wells, EX-1, EX-2, TOP-4, TOP-5R, TOP-19 and TOP-Skinner (Figure 1). The water flows through a bag filter and enters the carbon units, exiting to a storage tank at the Site (Figure 3). The system includes variable frequency drive pumps, which can be set to pump at the desired

pumping rate for each well individually. The EGTS is equipped with piping and inlet works for connecting up to two additional groundwater extraction wells or well sets. The EGTS design and construction has been documented by Advanced Remediation Technologies (ART) as part of the *Construction Report: Payson WQARF Site, EX-1 & EX-2 Extraction Wellheads, Payson, Arizona*, (ART, May 2002) and *Construction Report: Expanded Groundwater Treatment System, Payson, Arizona*, (ART, March 2000).

The GAC vessels and other components of the treatment system are housed in a 3,000-square-foot manufactured steel building. The carbon is periodically backflushed or replaced, based on results of water sampling. Generally, the carbon has been changed whenever breakthrough between the first and second vessels occurred, which has been approximately two years between events. The treated water is chlorinated by the Town of Payson in a contact chlorination tank located adjacent to the EGTS building and delivered to the Town of Payson potable water supply system through an onsite inter-connect.

The EGTS is controlled by means of a program logic controller (PLC) and a personal computer (PC). The PC functions as the data storage device and is the means by which changes in operations parameters (set points) can be input to the PLC. The PLC is programmed to automatically dial a list of personnel should the system go off-line. Figure 3-2 shows the completed EGTS design with the EX-1 and EX-2 extraction wells.

3.2 ACHIEVEMENT OF REMEDIAL OBJECTIVES

The ROs for the Site have been developed with input from land owners, local governments, water providers and the public. The ROs for the Site are generally consistent with the Town of Payson Water Management Plan and General Land Use Plan. The ROs were developed based upon the current and reasonably foreseeable uses of land and reasonably foreseeable beneficial uses of water. The ROs were prepared for each listed use in the following terms pursuant to R18-16-406:

- Protecting against the loss or impairment of each listed use that is threatened to be lost or impaired as a result of a release of a hazardous substances;
- Restoring, replacing, or otherwise providing for each listed use to the extent that it has been or will be lost or impaired as a result of a release of a hazardous substance;
- Time frames when action is needed to protect against or provide for the impairment or loss of the use; and,
- The projected duration of the action needed to protect or provide for the use.

3.2.1 Remedial Objectives for Land Use

The former source area for the Site is located at 904-906 S. Beeline Highway (the Property). The Property was previously a dry cleaning facility and has been redeveloped for commercial/retail use. The area is zoned C-3 for commercial structures and these

plans appear to be consistent with zoning and Town of Payson planning. Three early removal actions were conducted at the Property to remove underground structures and contaminated soils: 1) a septic tank used for disposal of dry cleaning waste; 2) a cesspool, approximately 40 feet in depth, along with some surrounding soils; and 3) three underground storage tanks used for the storage of gasoline and diesel. Soils impacted by PCE have been removed from the former source area. Because there may have been remaining PCE mass in the soil beneath the former source area, where the water table has been lowered, PCE was removed from these soils through vapor extraction as an ERA. For the purposes of the PRAP, any remaining residual PCE in soil was assumed to be sufficiently deep that it is unlikely to cause a threat to potential land use at the Property and only presents a potential threat to groundwater quality, if water levels rise and groundwater re-saturates the remaining impacted soil.

Land use throughout the Site is generally residential and commercial, with large areas of open space. The Green Valley Redevelopment Plan (Town of Payson, 2000), established by the Town of Payson to revitalize the Main Street corridor area, will encourage zoning changes and infrastructure improvements to facilitate this development. Based on information from the Payson Roundup and Town of Payson, Payson Regional Housing Development acquired three acres of property near on the Site, formerly owned by Mr. Dannie Garcia, located east of McLane Road, between Main Street and Aero Drive. A low income housing project was completed on this property in 2003. There are additional preliminary development plans under discussion for portions of the Site. ADEQ will work with the Town of Payson and potential site developers to mitigate any issues that may arise during the planning process. The following remedial objective for land use was developed according to current and potential future land uses.

The redevelopment of the 904-906 S. Beeline Highway property for commercial/retail use has occurred and remains reasonably foreseeable. The RO for this use is:

- Protect against possible exposure to hazardous substances in surface and subsurface soils that could occur during development for commercial/retail use. If additional work at the Property is necessary beyond the previously conducted early response actions, ADEQ will coordinate with the Town of Payson and local property owners and work towards a final remedy that is compatible with these development plans.

Soil vapor extraction and soil removal actions were implemented as ERAs to complete source control and to remove soil contamination at the Site. No soil samples collected as part of the closure of the SVE system exceeded relevant soil standards (GPLs or SRLs) (GeoTrans, 2002a). For this reason, remedial objectives for soils have been achieved, and no metrics for future evaluation are needed.

3.2.2 Remedial Objectives for Groundwater Use

The Town of Payson businesses and residents are solely dependant upon the groundwater aquifer for their water supply. Groundwater within and near the Site is used by both

municipal and private users. The Town of Payson is the primary municipal water provider and is completely dependant upon groundwater to meet their water needs. Additionally, many private well owners are dependent upon their wells for their water supply.

Currently, five of the Town of Payson production wells (TOP-4, TOP-5R, TOP-19, TOP-20 and TOP-Skinner) within the Site have been impacted with PCE above the 5.0 µg/L AWQS. Four of the Town of Payson production wells (TOP-4, TOP-5R, TOP-19 and TOP-Skinner) and two recently installed ADEQ extraction wells (EX-1 and EX-2) are used to extract groundwater from the Site. The IGTS, which most recently obtained pumped groundwater from extraction well EW-4, was shutdown in January 2003. Well EW-4, which has delivered water for the Town of Payson municipal supply, was then abandoned. The Town of Payson production well TOP-New McKamey has detected PCE in groundwater samples, but the concentrations have never exceeded the AWQS.

The Town of Payson operates the EGTS, which remediates water to below the PCE AWQS and directly delivers treated groundwater to its municipal customers. The Town of Payson is dependant upon the treated groundwater to meet current and future water demand. The groundwater resource within the Site, without treatment, may be considered lost and/or impaired and further impacts to groundwater may be possible if the groundwater contamination plume is not managed. A discussion of reasonably foreseeable water uses and the remedial objectives proposed for each use follows.

Lost or Impaired Municipal Use of Groundwater

The use of groundwater by the municipal water provider is considered reasonably foreseeable. The RO for this use is:

- To restore, replace, or otherwise provide for the use of groundwater currently lost or impaired by PCE contamination at the Site. Water will be provided to the Town of Payson in continuity with existing water treatment at the Site. The action will continue for as long as the need for the water exists, the resource remains available and PCE concentrations in the water prevent its direct use as a domestic water supply.

In the absence of groundwater treatment, Town of Payson production wells TOP-4, TOP 5R, TOP-19, TOP-20 and TOP-Skinner would be "lost" since PCE concentrations exceed the relevant AWQS of 5 µg/L. The installation and operation of the EGTS as the Selected Remedy provides municipal water below AWQS from these wells. The metric for evaluating the remedial action will be to measure the changes in PCE concentrations in these wells to demonstrate whether concentrations are declining at each well. The goal will be to achieve PCE concentrations of less than the AWQS of 5 µg/L in these wells and nearby monitor wells to demonstrate cleanup.

Threatened Municipal Use of Groundwater

Groundwater threatened by PCE from the Site will be needed for future use by the Town of Payson. Currently, the Town of Payson production well TOP-New McKamey has detected PCE in the groundwater samples. It is possible that the detected PCE in this production well is associated with the Site, though the detected PCE concentrations are below the AWQS. If the PCE concentrations in New McKamey exceed the AWQS, ADEQ will evaluate the connection of this well to the EGTS. A preliminary contingency evaluation of the costs and construction requirements for connection of the New McKamey well to the EGTS is included as part of the remedy contingency evaluation in Section 5 of this report.

The threatened municipal use of groundwater is considered reasonably foreseeable and the RO for the use is:

- To protect or otherwise provide for the use of groundwater currently threatened by PCE contamination from the Site. The protection of threatened groundwater will occur as soon as possible and continue for as long as the need exists, the resource remains available and PCE contamination threatens municipal use of groundwater.

In the absence of groundwater pumping for treatment, Town of Payson production well TOP-New McKamey would be "threatened" since PCE concentrations have been detected in groundwater samples, although none have exceeded the relevant AWQS of 5 µg/L. The installation and operation of the EGTS as the Selected Remedy captures and contains the PCE plume for the Site, which will prevent the further spread of PCE contamination to the TOP-New McKamey well. The metric for evaluating the remedial action will be to measure the changes in PCE concentrations in this well to demonstrate whether concentrations are increasing and the potential for PCE concentrations to exceed AWQSs of 5 µg/L. Additionally, monitoring the groundwater gradient near monitor well sets WS-10, WS-11 and WS-14 will identify potential changes in plume capture during the operation of the EGTS.

Threatened Private Groundwater Use

The threatened use of groundwater by the private groundwater user is considered reasonably foreseeable. The RO for this use is:

- To protect or otherwise provide for the use of groundwater currently threatened by PCE contamination from the Site. The remedy will provide protection for individuals owning a threatened well and will be implemented in continuity with existing actions designed to protect and preserve water quality. The action will continue for as long as the need for the water exists, the resource remains available and PCE contamination in the water prevents its direct use.

The RO of containment and capture of the PCE plume was demonstrated for the selected remedy in the FS. The conclusion of the evaluation in the FS was that the selected remedy is capable of meeting the objective of capturing and containing the plume. This is based on the observed water levels which show that the gradient has reversed toward the Site, with complete capture conditions. The FS model results indicate that the gradient will continue to remain inward to the extraction wells maintaining capture during the lifecycle of the Selected Remedy. The metric for evaluating the remedial action will be to measure the changes in PCE concentrations and groundwater gradients in the nearby monitor wells to demonstrate whether plume capture is maintained.

ADEQ has supplied, on an emergency basis, bottled water to impacted well owners for drinking water uses. This remedy can be implemented temporarily if wells become impacted. ADEQ recommends connecting to the Town of Payson's municipal water system, which is the preferred option for impacted private well owners, if feasible. The Town of Payson has a limited or no-cost option for connection of private residences.

Threatened Tonto Apache Tribe Groundwater Use

The threatened use of groundwater by the Tonto Apache Tribe (the Tribe) is considered reasonably foreseeable. The Tribe currently owns a well located at McLane Road and the Beeline Highway which was evaluated as part of the FS. The Tribe also owns land near McLane Road and Aero Drive (Figure 1) which may be used in the future to provide domestic water for use on Tribal lands. Because of this possible new water use, ADEQ has included the potential water use of the Tonto Apache Tribe as a supplemental RO for the Site. The RO has been added in response to communication from the Tonto Apache Tribe. The RO for this use is:

- To protect the possible future use of groundwater currently threatened by PCE contamination from the Site. The remedy will provide protection for Tribal owned land and will be implemented in continuity with existing actions designed to protect and preserve water quality. The action will continue for as long as the possible need for the water exists, the resource remains available and PCE contamination in the water may prevent its direct use.

The RO of containment and capture of the PCE plume was demonstrated for the selected remedy in the FS. The conclusion of the evaluation in the FS was that the selected remedy is capable of meeting the objective of capturing and containing the plume, preventing the plume from migrating to the lands owned by the Tribe. The metric for evaluating the remedial action will be to measure the changes in PCE concentrations and groundwater gradients in the nearby monitor wells (Well Sets WS-5, WS-6 and WS-7) to demonstrate whether plume capture is maintained in the western portion of the Site.

If a production well is installed on Tribal owned lands near McLane Road and Aero Drive, further evaluation of the potential impacts on the ongoing remedial action will need to be completed. This evaluation will need to determine whether the volume and rate of proposed pumping will cause changes in plume configuration and loss of plume

capture. ADEQ does not recommend the installation of such a well, since loss of plume capture is possible and potential PCE impacts in this well may prevent its direct use.

3.3 ACHIEVEMENT OF REMEDIAL ACTION CRITERIA PURSUANT TO ARS §49-282.06

The Reference Remedy from the FS has been selected as the Final Remedy for the Site. Based on a comparison with the Less Aggressive and More Aggressive Remedies (see FS Report, GeoTrans, 2003), the Reference Remedy appears to:

- Best assure, the protection of public health and welfare and the environment;
- To the extent practicable, provide for the control, management and cleanup of the PCE contamination, maximizing beneficial use of the groundwater in the Town of Payson; and,
- Is reasonable, necessary, cost-effective and technically feasible.

Because the EGTS is currently operational and data indicates that it contains, captures, and will remediate the plume, this remedy is clearly the best choice. The results of model simulations and review of operational data suggest that the system is reasonably efficient and that no significant changes are warranted.

Although the groundwater flow modeling was not conclusive regarding time-frames to complete the cleanup of the Site, an analysis of the current trends in the measured PCE concentrations was completed for a variety of monitor wells and currently used extraction wells at the Site, as part of the FS. This analysis leads to an estimate of 30 years of system operation to complete remediation at the Site. The data presented in the FS suggested that the EGTS will achieve the ROs, presuming that water level declines do not cause significant changes in the operation of the EGTS, which was evaluated as a contingency. These possible future declines in water levels may cause changes in the effectiveness of plume capture and containment, which has been attained by the EGTS. For these reasons, the 30-year life-cycle estimates were thought to reasonably account for uncertainty in time frames for remediation.

3.4 COMPLIANCE WITH ARIZONA ADMINISTRATIVE CODE (A.A.C)

ADEQ published a notice of availability in the Payson Roundup newspaper on March 11 and 18, 1998 and in the Arizona Republic newspaper on March 9 and 12, 1998 according to A.A.C. R18-16-403. The notice of availability informed community members and interested parties that a scope of work, a fact sheet, and the outline of the community involvement plan was available for review and comment. The fact sheet was also mailed out to a mailing list that included Payson residents within the immediate vicinity of the Site.

ADEQ complied with A.A.C. R18-16-404 in respect to community involvement requirements. All community involvement requirements are documented in section 3.5 and table 3-2.

Four early response actions (ERA) were conducted complying with A.A.C. R18-16-405 which outlines early response actions. Each of the ERAs were conducted in order to address a current risk to public health, welfare and the environment; protect or provide a supply of water; address sources of contamination; or control or contain contamination where such actions were expected to reduce the scope or cost of the remedy needed at the site. The following outlines each ERA that was conducted at the site:

- In 1995, ADEQ conducted an ERA to remove the septic vault, fluids, and contaminated soil associated with the dry cleaner that operated at the site. During excavation activities, a cesspool was located south of the septic vault. The cesspool appeared to be a major source of soil and groundwater contamination.
- Between September 1996 and October 1997, ADEQ designed and built the Interim Groundwater Treatment System (IGTS). The IGTS operated using groundwater extraction wells near the source area. The IGTS was shut down in January 2003 due to lowered concentrations of contamination.
- Between August 1997 and October 1998, ADEQ designed and constructed the Expanded Groundwater Treatment System (EGTS). The EGTS is connected to wells throughout the contamination plume and is designed to remove contamination and prevent the plume from spreading further.
- ADEQ began operation of a soil vapor extraction system in August 2001 near the source area to remove contaminants that were contained in the soil and soil vapor. The SVE system was shut down in August 2002 due to decreased PCE concentrations.

The final *Remedial Investigation Report – Payson PCE WQARF Site* was published on June 4, 2002 (GeoTrans, 2002). A notice of availability was published in the Payson Roundup newspaper on July 1, 2002 (Table 3-2). According to A.A.C. R18-16-406, the RI report established the nature and extent of the contamination and the sources thereof; identified current and potential impacts to public health, welfare, and the environment; identified current and reasonably foreseeable uses of land and waters of the state; and obtained and evaluated any other information necessary for identification and comparison of alternative remedial actions. The RI report was released in draft form for public comment on July 20, 2001. After the public comment period, the proposed remedial objective (RO) report was released for public comment on April 12, 2002. The two reports were combined to form the final RI report as described above.

A work plan was then written to describe how the feasibility study (FS) report was to be compiled. The work plan was written following A.A.C. R18-16-407B outlining specific elements to be included. A notice of the work plan availability was published in the Payson Roundup and mailed directly to interested parties and the site mailing list in July 2002.

Following the work plan as described above, the *Feasibility Study Report – Payson PCE WQARF Site* was published on May 29, 2003. The FS report, as required by A.A.C. R18-16-407, included a reference remedy that was evaluated and capable of meeting the remedial objectives, along with a more aggressive and a less aggressive remedy. The FS report evaluated each remedial alternative and detailed the ability for the remedial alternative to achieve the remedial objectives; evaluated the consistency with the water management plans of affected water providers and the general land use plans of local governments; a comparison of criteria such as practicability, feasibility, effectiveness, reliability, etc.; evaluated the risk associated with the alternative; evaluated the total cost; and evaluated the benefit, or value, of the remediation.

The *Proposed Remedial Action Plan – Payson PCE WQARF Site* was published on August 25, 2003 according to A.A.C. R18-16-408 after the final FS report had been compiled. The PRAP contained a description of the proposed remedy, the information required in A.R.S. §49-287.04(A), a description of how the proposed remedy will achieve the remedial objectives; and a description of all recharge, discharge, transportation, and use of remediated water as defined in A.R.S. §49-283.01. A public comment period on the PRAP was conducted and a notice was published in the Payson Roundup on September 2, 2003. One comment letter was received. The responsiveness summary associated with the comments is found in section 4.0 of this document.

ADEQ took reasonable effort in researching responsible parties. According to §49-287.02(A), the department determined that cost recovery was not appropriate.

3.5 COMMUNITY INVOLVEMENT AND PUBLIC COMMENT REQUIREMENTS

ADEQ has completed all required community involvement and public comment requirements for the Payson PCE WQARF Site. The activities and time periods for these requirements are outlined in the table below.

Table 3-2
Community Involvement and Public Comment Requirements

Community Involvement Activity	Date
Community Involvement Area (CIA)	CIA was established in 1997.
Notice of the site listing on the Registry A.R.S. §287.01	Published in the *Payson Roundup* – March 11 and 18, 1998.
	Published in the *Arizona Republic* – March 9 and 12, 1998.
Notice of the availability of the scope of work, fact sheet, and community involvement plan A.R.S. §287.03 (C)	Published in the *Payson Roundup* – March 11 and 18, 1998.
	Published in the *Arizona Republic* – March 9 and 12, 1998.
Hazardous substance contamination notice A.R.S. §289.02	Requirement satisfied by fact sheets distributed to CIA in 1994, 1997, 1998, 2001, and 2002.
Establishment of a Community Advisory Board (CAB) selection committee	Selection committee was established in December 1997. Review of CAB member applications completed in March 1998.
Community Advisory Board (CAB)	Established in June 1998.
Public Notice of CAB Meetings	All CAB meeting agendas are posted on ADEQ's website and at all ADEQ offices. Agendas are also mailed to the site mailing list.
Establishment of a public document repository	Established in June 1998 at the Payson Public Library
Public comment period on the draft RI report	Published in the *Payson Roundup* – July 20, 2001
Public comment period on the proposed remedial objectives report	Published in the *Payson Roundup* – April 12, 2002
Notice of the availability of the final RI report	Published in the *Payson Roundup* – July 1, 2002
Notice of the availability of the Feasibility Study (FS) work plan	The notification was mailed to interested parties and the mailing list in July 2002.
Public comment period on the proposed remedial action plan (PRAP)	Published in the *Payson Roundup* – September 2, 2003

4.0 RESPONSIVENESS SUMMARY

During the public comment period for the PRAP for the site, ADEQ received one public comment on October 3, 2003 from Sparks, Tehan & Riley, P.C., on behalf of the Tonto Apache Tribe. A copy of the letter is attached for reference as Appendix A. The following are comments from the Tonto Apache Tribe and ADEQ's responses.

Comment #1

The Tonto Apache Tribe ("Tribe") and Toonzchunee Investments, Inc., which is owned by the Tonto Apache Tribe, own wells which are immediately threatened by the tetrachloroethene (PCE) contamination. The wells are as follows:

a. A well on the "Hillside" property, presently owned by Toonzchunee Investments, Inc., which is located near the intersection of Aero Drive and McLane Road, immediately west (down-gradient) of the current location of the contamination plume. This well is not currently being used, but this well would be immediately threatened by a spread in the contamination plume as illustrated in the PRAP.
b. A well on the Paysonglo Lodge property, presently owned by Toonzchunee Investments, Inc. The well is located immediately southeast, cross-gradient, of the contamination plume.
c. A well located at McLane Road and Beeline Highway ("Tribal Well"), owned by the United States in trust for the Tonto Apache Tribe, drilled to provide water to the Tonto Apache Reservation. The well is located approximately 800 feet south of the Payson PCE WQARF site.

The Tribe is concerned that the proposed pumping rate of 200 gpm coupled with the increasing use of groundwater by the Town of Payson and other private well owners will impact the production of the Tribal Well, which in turn, impacts the Tribe's right to use groundwater to satisfy the purposes of the Tonto Apache Reservation as a permanent Tribal Homeland. The PRAP does not address what mitigation steps would be taken if the Tribal Well's production is further reduced by the activities proposed in the PRAP.

Response to Comment #1

Water levels have continued to drop due to drought conditions and since the groundwater treatment system became operational. While ADEQ requires that the Expanded Groundwater Treatment System (EGTS) pump at approximately 200 gpm to contain the plume, the Town of Payson would have pumped the production wells located in the area to provide for their water supply even if the EGTS did not exist. The Town of Payson has stated that 35% of the Town of Payson water supply comes from the Green Valley area. ADEQ suggests that the Tribe and the Town of Payson meet directly and discuss water usage and pumping rates of the Tribal well and the Skinner well. ADEQ, however, does not recommend usage of any production wells in close proximity to the WQARF site, since outside influences may be counterproductive to the remediation efforts currently in place.

a. ADEQ monitors a set of three wells, WS-6, located near the "Hillside" property. Results from groundwater samples collected in September 2003 indicate that no contaminants were detected. Around October 2005, the production wells in the Payson PCE WQARF site that are connected to EGTS were not producing enough water to operate the system. Maintenance activities were initiated in order to rehabilitate production from the well. Due to decreased production from the wells connected to the EGTS, contamination migrated slightly to the west. PCE levels in WS-6 have been below the AWQS. If during the course of monitoring WS-6, groundwater concentrations increase above the aquifer water quality standard (AWQS), ADEQ may install an additional extraction well down-gradient of EX-1 to regain capture of the plume. ADEQ does not recommend operation of a well on the "Hillside" property as it may be counterproductive to the remediation efforts currently in place.
b. The well located at the Paysonglo Lodge has in the past been used for irrigation. This well was impacted by the contamination in the early 1990's, however; since the hotel has been on city water the well has not been contaminated. The only influence in groundwater flow in the early 1990's was from domestic wells and pumping from Paysonglo Lodge probably captured a portion of the contaminated groundwater. Once pumping from the Paysonglo Lodge well ceased, the contaminated groundwater was able to resume a westward flow, away from the Paysonglo Lodge well. The groundwater flow direction is currently to the west and the hotel is located cross-gradient to the plume. With the large capture zone created by the EGTS, the Paysonglo Lodge well should not be impacted by the plume.
c. The Tribal well is located near the contact with the Gibson Creek Batholith, Payson Granite, and Quaternary Alluvium (Remedial Investigation Report, June 2002). Wells completed in the Gibson Creek Batholith have very poor water production rates, significantly lower than the water production rates for the Payson Granite. The proximity of the Tribe well with the Gibson Creek Batholith limits the amount of water available to the well. The batholith acts as a barrier for water movement south of the well. The Town of Payson began operations with the Skinner well, located approximately 1,400 feet from the Tribal well, in September 1995 pumping approximately 140 gpm. In 1996 the Skinner well was deepened and began pumping approximately 220 gpm. The Tribal well began operation in May 1997 at 60 gpm and the production rate quickly declined to approximately 7 gpm by the beginning of 1998. Please refer to Figure 7-8 in the Feasibility Study Report. Water levels in the immediate area of the Tribe well have declined steadily since 1995. This can be attributed to several factors, such as; drought, pumping of the Skinner well, and lack of productive aquifer material in the vicinity of the Tribe well. At the beginning of 2007, the Skinner well pumps approximately 30 gpm.

Comment #2

The Tribe is also concerned that during earlier phases of the project, the Tribe was not contacted directly about the PCE contamination. It appears from the timeline in the

PRAP, that ADEQ has worked substantially with the Town of Payson over the years, but has made little effort to involve the Tribe. The Tribe appreciates the recent notifications from ADEQ regarding the PCE WQARF site and would hope that ADEQ will involve the Tribe when issues arise pertaining to the PCE WQARF site or with other issues arising from the implementation of ADEQ's responsibilities which might impact the Tonto Apache Tribe.

Response to Comment #2

ADEQ has been primarily concerned with the location and movement of contamination and with five Town of Payson production wells that are directly impacted. ADEQ did notify the tribe and residents of the surrounding area of the availability to review and comment on the RI report and received comments from the Town of Payson, Arizona Department of Water Resources, and from residents attending the open house on July 24, 2001. ADEQ also holds regular community advisory board (CAB) meetings in which the public is encouraged to attend. Notices announcing the public meetings are mailed to a community involvement area surrounding the site as well as posted on the ADEQ website. ADEQ will continue to inform the Tribe if there is any change in the situation at the Payson PCE WQARF Site.

5.0 COST ESTIMATE

The EGTS has been selected as the final remedy for the Payson PCE WARF Site based on the previously completed feasibility study report and the proposed remedial action plan. According to R18-16-410 (B) (7), a total estimated cost shall be compiled for the remaining time for the remedy to be completed. This cost estimate is based on interpretation of the PCE concentration time series graphs from the feasibility study report for wells at the Site; assuming a conservative cleanup time-frame. These graphs suggest that the concentration of PCE will be below the aquifer water quality standard of 5 µg/L at each of the monitoring wells by the year 2033, based on exponential decline rates. This cost estimate is also based on the following factors and assumptions:

- Groundwater extraction rates will not rise or fall significantly over the operational life span of the EGTS;
- The costs will not change significantly if groundwater extraction rates fluctuate over time, since the majority of operational costs are not based on pumping rates;
- Semi-annual groundwater monitoring of the existing monitor well network will continue through the operational life of the EGTS, and for 3 years after the operational life of the EGTS;
- GAC change-outs will occur approximately every two years based on biological- and/or mineral-related fouling of the carbon rather than VOC mass contaminant loading;
- No new extraction or monitoring wells will be drilled, and deepening of the existing production wells will not be completed;
- The O&M estimate does not include significant capital equipment replacement over the life cycle of the remedy, but assumes normal maintenance and repair of existing capital equipment; and,
- The Inter-Governmental Agreement (IGA) between ADEQ and the Town of Payson will continue through the life of the EGTS, by which the Town oversees operation and maintenance of the EGTS.
- A life cycle of 25 additional years is assumed to evaluate the total cost of the EGTS. For the purpose of the cost analysis, a time frame of ADEQ FY 2008 through 2033 (25 years) is assumed for system O&M on the selected remedy

(EGTS only), and FY 2008 through 2036 for groundwater monitoring activities in order to confirm cleanup of the contamination.

An estimate of the total system implementation costs for the selected remedy and all ERA activities that were conducted at the site includes:

- Approximately $ 10.7 Million (M) in capital equipment, system construction and O&M, and all ERA activities incurred through FY 2007.

Based on the assumptions listed above, the estimated costs prior to FY 2008, and the costs estimated in the table below; the selected remedy has an approximate total cost of $21,444,107. The costs estimated in the table below outline yearly operation and maintenance of the EGTS; and groundwater monitoring, sampling, and reporting costs. An inflation rate of 3 percent (%), estimated by the U.S. Federal Reserve Board, is applied to each year through 2036.

Table 5-1
Estimated Cost

ADEQ Fiscal Year	EGTS Operation & Maintenance	Groundwater Monitoring, Sampling, and Reporting	Community Involvement	Combined Total
Through FY 2007				$ 10,715,537.22
2008	$ 100,000	$ 150,000	$ 2,000	$ 252,000
2009	$ 103,000	$ 154,500	$ 2,060	$ 259,560
2010	$ 106,090	$ 159,135	$ 2,122	$ 267,347
2011	$ 109,273	$ 163,909	$ 2,185	$ 275,367
2012	$ 112,551	$ 168,826	$ 2,251	$ 283,628
2013	$ 115,927	$ 173,891	$ 2,319	$ 292,137
2014	$ 119,405	$ 179,108	$ 2,388	$ 300,901
2015	$ 122,987	$ 184,481	$ 2,460	$ 309,928
2016	$ 126,677	$ 190,016	$ 2,534	$ 319,226
2017	$ 130,477	$ 195,716	$ 2,610	$ 328,803
2018	$ 134,392	$ 201,587	$ 2,688	$ 338,667
2019	$ 138,423	$ 207,635	$ 2,768	$ 348,827
2020	$ 142,576	$ 213,864	$ 2,852	$ 359,292
2021	$ 146,853	$ 220,280	$ 2,937	$ 370,070
2022	$ 151,259	$ 226,888	$ 3,025	$ 381,173
2023	$ 155,797	$ 233,695	$ 3,116	$ 392,608
2024	$ 160,471	$ 240,706	$ 3,209	$ 404,386
2025	$ 165,285	$ 247,927	$ 3,306	$ 416,518
2026	$ 170,243	$ 255,365	$ 3,405	$ 429,013
2027	$ 175,351	$ 263,026	$ 3,507	$ 441,884
2028	$ 180,611	$ 270,917	$ 3,612	$ 455,140
2029	$ 186,029	$ 279,044	$ 3,721	$ 468,794
2030	$ 191,610	$ 287,416	$ 3,832	$ 482,858
2031	$ 197,359	$ 296,038	$ 3,947	$ 497,344
2032	$ 203,279	$ 304,919	$ 4,066	$ 512,264
2033	$ 209,378	$ 314,067	$ 4,188	$ 527,632
2034	-	$ 323,489	$ 4,313	$ 327,802
2035	-	$ 333,193	$ 4,443	$ 337,636
2036	-	$ 343,189	$ 4,576	$ 347,765
Total	$ 3,855,304	$ 6,782,828	$ 90,438	$ 21,444,107

6.0 REMEDY REVIEW

The EGTS is expected to take until the year 2033 to achieve groundwater aquifer water quality standards. According to A.A.C. R18-16-410 (B) (8), ADEQ will review the remedy every five (5) years from the issuance of the record of decision document.

The five year review will ensure that the remedy is operating as designed and is progressing as expected. The review will also enable ADEQ to ensure that the performance standards specified in the proposed remedial action plan remain protective of human health and the environment. ADEQ will continue to review the remedy every five years until the remedy is no longer feasible to continue operating at the site.

7.0 REFERENCES

ADEQ, 1993. *Site Inspection, Old Payson Dry Cleaners Sites, 904-910 S. Beeline Highway, Payson, Arizona 85541, Gila County.* Arizona Department of Environmental Quality, Office of Water Quality, Groundwater Hydrology Section, Site Assessment Hydrology Unit, August 23, 1993.

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GeoTrans, 2003. *Proposed Remedial Action Plan – Payson PCE WQARF Site, Payson, Arizona.* August 23, 2003.

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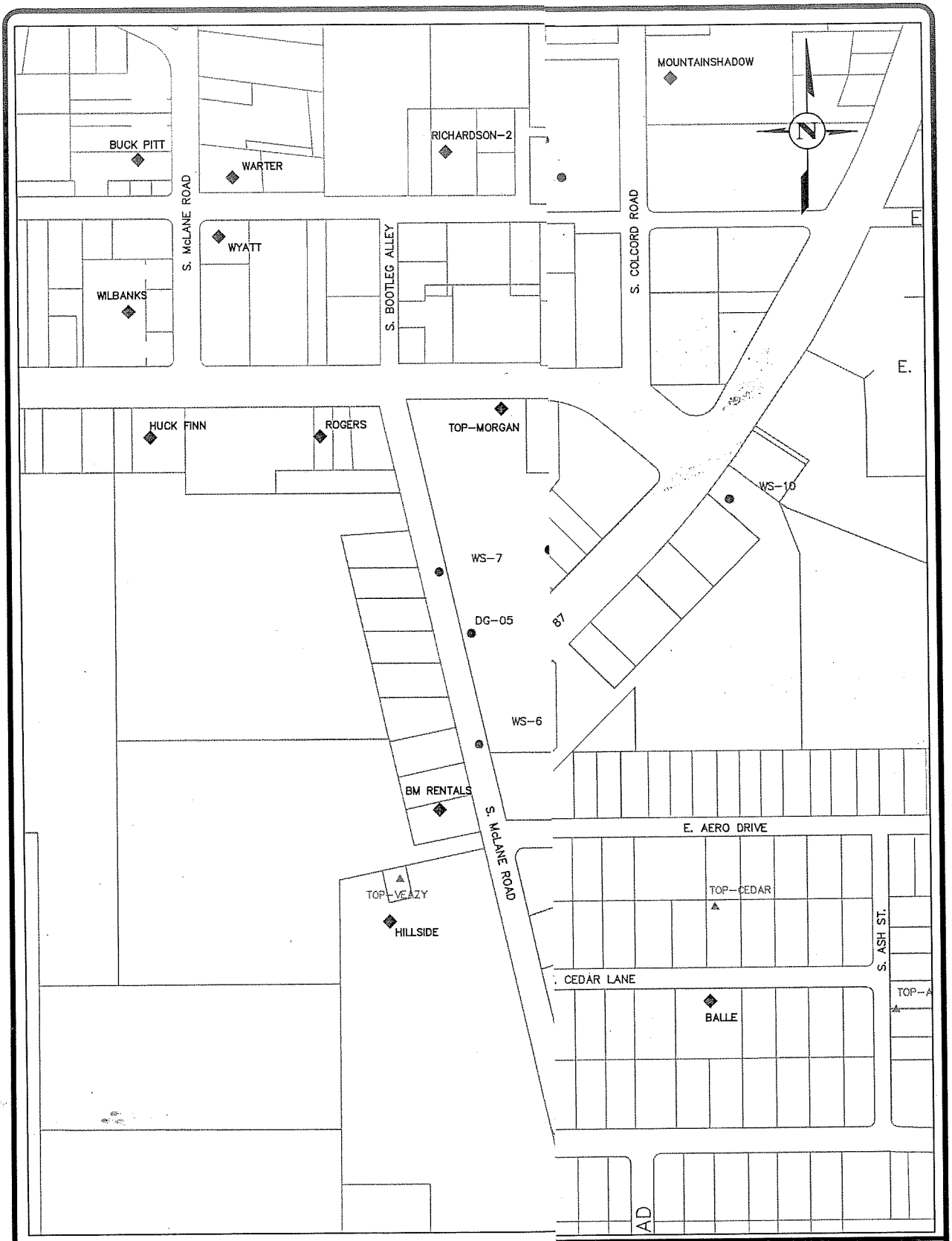
Town of Payson, 2000. *Green Valley Redevelopment Area Plan, Town of Payson Community Development Department*, September, 2000.

FIGURES



EXPLANATION

- Monitor Well
- Extraction Well
- Town of Payson Well
- Domestic Well

E BOUNDARIES
N PCE WQARF SITE

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PROJECT	F144-G66
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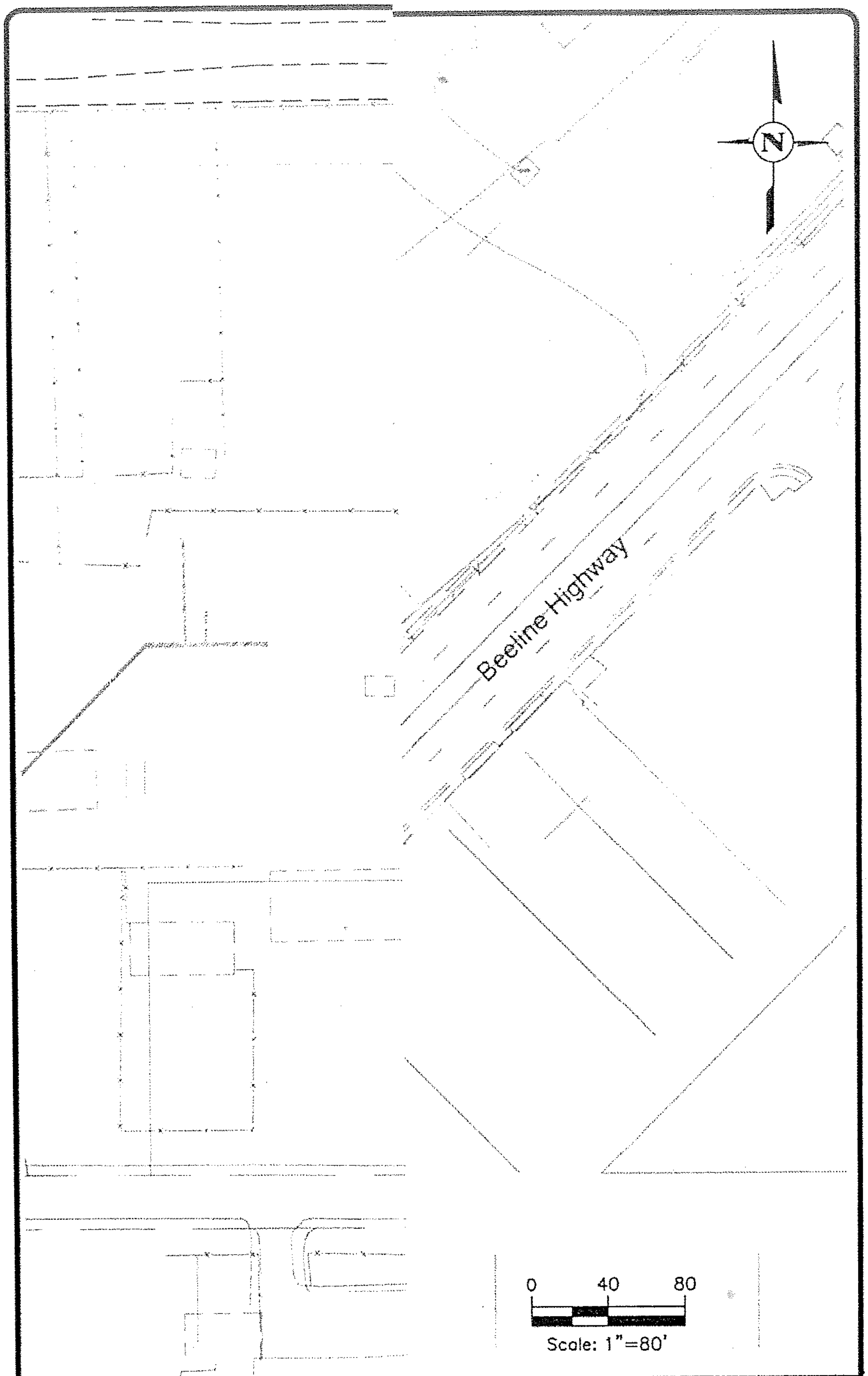
FIGURE 1



Site Plan
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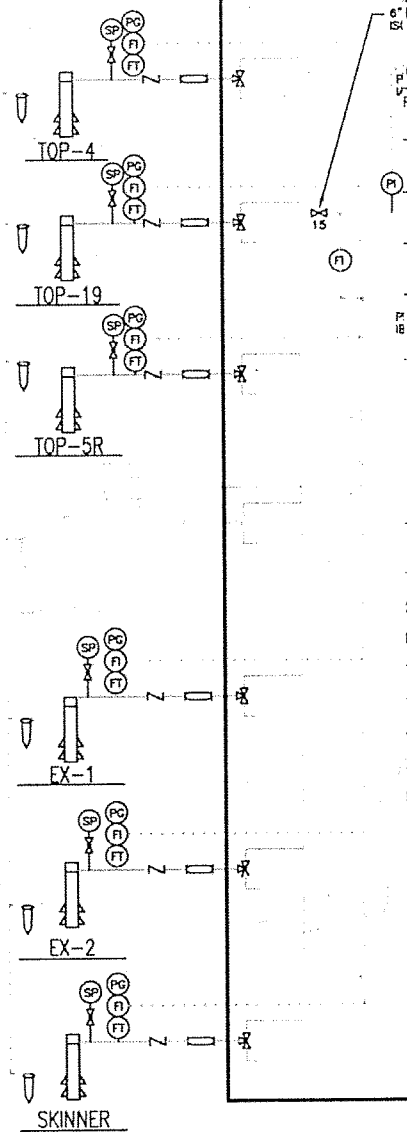

NOTES

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CHEDULE

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PACO 3095-5	60
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EFFLUENT
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TREATMENT DEVICE

REVISION INFORMATION		
MILESTONE	DATE	REVIEWING AGENCY
RECORD DRAWING	03/11/02	ARIZONA DEQ

"PARTNERS IN SERVICE"
Advanced Remediation Technologies Co.
119 NW 4TH AVE CANBY, OREGON 97013
PHONE: (503) 266-2122 fax: (503) 266-4724

ARIZONA DEQ
TOWN OF PAYSON - WQARF
PAYSON, ARIZONA

PROCESS & INSTRUMENTATION DIAGRAM

DATE	03/11/02
DRAWN	LAD
DESIGN	LAD
CHECK	
SCALE	NTS
P&ID	

Figure 3

APPENDIX A

SPARKS, TEHAN & RYLEY, P. C.
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Scottsdale, Arizona 85251-4573
(480) 949-1339
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Joe P. Sparks
John H. Ryley
Robyn L. Kline
Susan B. Montgomery

October 2, 2003

Via Certified Mail - Return Receipt Requested
7002 1000 0004 6837 1227

David Hagg, ADEQ Project Manager
Arizona Department of Environmental Quality
1110 West Washington Street, 4415B-1
Phoenix, Arizona 85007

Re: Tonto Apache Tribe's Comments to Arizona Department of Environmental Quality - Notice of the Availability of the Proposed Remedial Action Plan (PRAP) for the Payson PCE Water Quality Assurance Revolving Fund (WQARF) Registry Site published September 2, 2003

Dear Mr. Haag:

These comments are submitted on behalf of our client, the Tonto Apache Tribe, in response to the Public Notice 30-Day Comment Period for the *Arizona Department of Environmental Quality - Notice of the Availability of the Proposed Remedial Action Plan (PRAP) for the Payson PCE Water Quality Assurance Revolving Fund (WQARF) Registry Site* published September 2, 2003.

The Tonto Apache Tribe ("Tribe") is a federally-recognized Indian Tribe organized pursuant to Section 16 of the Indian Reorganization Act of 1934 (48 Stat. 984). The Tonto Apache Reservation is located immediately adjacent to the southern boundary of the Town of Payson and is in close proximity to the PCE contamination plume discussed in the PRAP. In addition, Toonzchunee Investments, Inc. ("Toonzchunee"), which is owned by the Tonto Apache Tribe, owns land within the Town of Payson.

The Tribe and Toonzchunee own the following wells which are most immediately threatened by the PCE contamination:

1. A well on the "Hillside" property, presently owned by Toonzchunee Investments, Inc., which is located near the intersection of Aero Drive and McLane Road, immediately west of the current location of the contamination plume. This well is not presently being used and it is unclear as to whether or not the well is presently contaminated. However, this well would be immediately threatened by a spread in the contamination plume as illustrated in the PRAP.

2. A well on the Paysonglo Lodge property, presently owned by Toonzchunee Investments Inc., Arizona Department of Water Resources Registry ID #509839, ADEQ No. 46026, as discussed in Table 3-2 of the PRAP. This well is located east of the contamination plume and is also threatened.

3. A well located at McLane Road and Beeline Highway ("Tribal Well"), owned by the United States in trust for the Tonto Apache Tribe, drilled to provide water to the Tonto Apache Reservation. The Tribal Well, which supplies vitally needed water to the Reservation's residents, is located approximately 800 feet south of the Payson PCE WQARF Site. The Tribal Well is located in the same aquifer as that of the Payson PCE WQARF site.

The Tonto Apache Tribe claims a federally reserved right to groundwater to satisfy the purposes of the Tonto Apache Reservation as a permanent Tribal Homeland where groundwater is necessary to satisfy the purposes of the Reservation. *See In re the General Adjudication of All Rights to Use Water in the Gila River System and Source*, 195 Ariz. 411, 989 P.2d 739 (1999). Groundwater is a critical resource for the Tonto Apache Tribe as well as for the Town of Payson. 185 people live on the Tonto Apache Tribe's 85 acre Reservation. At present, the Tribal Well is unable to supply the demand for all of the Reservation's water needs due in significant part to the Town of Payson's operation of Town wells near the Tribal Well which pump extensively from the underground aquifer. Due to the inadequate supply of water from the Tribal Well, the Tribe is also dependent upon water purchased through a connection to the City of Payson water supply. The Tribe has concerns regarding the contamination of both sources of water supply to the Reservation residents and with respect to threatened contamination of wells on the property owned by Toonzchunee Investments.

The Tonto Apache Tribe is concerned that the proposed pumping rate of 200 g.p.m. coupled with the increasing use of groundwater by the Town of Payson and other private well owners will impact the production of the Tribal Well, which in turn, impacts the Tribe's right to use groundwater to satisfy the purposes of the Tonto Apache Reservation as a permanent Tribal Homeland. The PRAP does not address what mitigation steps would be taken if the Tribal Well's production is further reduced by the activities proposed in the PRAP.

The Tribe is also concerned that early on, the Tribe was not contacted directly about the PCE contamination. It appears from the timeline in the PRAP, that ADEQ has worked substantially with the Town of Payson over the years, but has made little effort to involve the Tribe. The Tribe appreciates the recent notifications from ADEQ regarding the PCE-WQARF Site and would hope that ADEQ will involve the Tribe early on when issues arise pertaining to the PCE-WQARF site or with other issues arising from the implementation of ADEQ's responsibilities which might impact the Tonto Apache Tribe.

Please continue to include the Tonto Apache Tribe on ADEQ's mailing list pertaining to this matter and directly contact the Tribe, or its counsel, if further developments in the Payson PCE-WQARF Site indicate that the PCE contamination plume will impact the Tribe's water resources.

Yours Truly,

SPARKS, TEHAN & RYLEY, P.C.

Robyn L. Kline

RLK/rlk
cc: Vivian L. Burdette, Chairperson, Tonto Apache Tribe
I:\INDIAN\TONTO\PCE-WQARF Site\comments to PRAP.wpd